6 SAMPLE HANDLING PROCEDURES

6.1 SAMPLE CONTAINERS AND PRESERVATION

Required containers, preservation, and holding times for each anticipated analysis are listed in Table 6-1. Requirements for tissues are provided in Volume III.

Table 6-1. Laboratory Analyses, Methods, Containers, Preservation, and Holding Time Requirements (Part 1 of 2)

Analysis	Method	Sample Container	Preservation	Holding Time
SOIL/SEDIMENT/BIOTA SAMPLES				
SVOCs and PAHs	8270C	8 oz. glass	Cool to 4°C	Extract within 14 days, analyze within 40 days.
Pesticides/PCB Aroclors	8081A/8082	8 oz. glass	Cool to 4°C	Extract within 14 days, analyze within 40 days.
Metals -selected analytes	6010B/7000 or 6020	8 oz. glass	Cool to 4°C	6 months
Dioxins/furans (17 congeners)	1613B	8 oz. amber glass	Cool to < 4°C in field Cool to <-10°C at lab[1/]	Extract within 1 year, analyze within 1 year
			or Cool to 4°C in field and at lab[2/]	Extract within 30 days, analyze within 45 days
TPHs	NWTPH Dx/Gx	4 oz. glass	Cool to 4°C	Extract within 14 days, analyze within 40 days.
	NW EPH/VPH	4 oz. glass	Cool to 4°C	Extract within 14 days, analyze within 40 days.
Cation exchange capacity	9080 or 9081	4 oz. glass	Cool to 4°C	6 months
WATER SAMPLES				
VOCs	8260B	2 x 40 ml glass	HCl to pH < 2, cool to 4°C	14 days
SVOCs	8270C	1 L amber glass	Cool to 4°C	Extract within 7 days, analyze within 40 days.
PAHs	8270C SIM or 8310	1 L amber glass	Cool to 4°C	Extract within 7 days, analyze within 40 days.
Metals -dissolved - selected analytes	6010B/7000 or 6020	500 mL HDPE	Filter on site; HNO_3 to pH < 2	6 months
Metals - total - selected analytes	6010B/7000 or 6020	500 mL HDPE	HNO_3 to pH < 2	6 months
Chlorinated pesticides	8081A	1 L amber glass	Cool to 4°C	Extract within 7 days, analyze within 40 days
TPHs	NWTPH Dx	1 L amber glass	HCl to pH < 2, cool to 4°C	Extract within 14 days (7 days if unpreserved), analyze within 40 days.
Alkalinity	310.1	250 mL HDPE	Cool to 4°C	14 days
Ammonia as nitrogen	350.3	1 L HDPE	H_2SO_4 to pH < 2, cool to 4°C	28 days
Chloride	300.0	125 mL glass or HDPE	None	28 days

Table 6-1. Laboratory Analyses, Methods, Containers, Preservation, and Holding Time Requirements (Part 2 of 2)

Analysis	Method	Sample Container	Preservation	Holding Time
Conductivity	120.1	250 mL HDPE	Cool to 4°C	28 days
Fluoride	300.0	125 mL glass or HDPE	None	28 days
Nitrate	300.0	250 ml glass or HDPE	Cool to 4°C	48 hours
Nitrite	300.0	125 ml glass or HDPE	Cool to 4°C	48 hours
pH	9040B or 150.1	125 ml HDPE	None	Analyze immediately
Ortho-phosphate	300.0	125 ml glass or HDPE	Filter and cool to 4°C	48 hours
Sulfate	300.0	125 mL glass or HDPE	Cool to 4°C	28 days
TOC	9060	125 mL glass	H_2SO_4 or HCl to pH < 2, cool to 4°C	28 days
TDS	160.1	125 mL glass or HDPE	Cool to 4°C	7 days
TSS	160.2	125 mL glass or HDPE	Cool to 4°C	7 days
Cation-anion balance (calculated)	SM 1030E	Not applicable	Not applicable	Not applicable
Tannin and lignin	SM 5550	125 mL glass	Cool to 4°C	Not applicable

Notes:

[1/] For dioxins/furans, maintain soil samples in the dark at < 4°C from the time of collection until receipt at the laboratory Upon receipt at the laboratory, soil samples will be stored in the dark at <-10°C; at this temperature the holding time from collection to extraction is one year. Extracts will also be stored at <-10 °C; at this temperature, the holding time from extraction to analysis is 1 year.

[2/] Alternatively, soil samples for dioxins/furans can be maintained in the dark at 4°C from the time of collection until extraction; at this temperature the holding time from collection to extraction is 30 days. For extracts stored at 4 °C; the holding time from extraction to analysis is 45 days.

6.2 SAMPLE PACKAGING AND SHIPPING

All samples collected will be assigned individual numbers, and will be individually labeled, noted in the site logbook, and recorded on the chain-of-custody form, as discussed in Section 4.8.6. Labels for sample containers will be filled out completely with all appropriate information. Samples will then be packed for shipment to the laboratory according to the current U.S. Department of Transportation (DOT) and WAC 173-303-071(3)(1) requirements. Sample containers will be packed in coolers with a low-density packing material, such as vermiculite, and Blue Ice® (or equivalent). The coolers will be securely sealed.

All samples will be either hand-delivered, couriered, or shipped via express delivery for overnight delivery, if possible, to the contracted laboratory. Custody seals will be used on coolers unless hand-delivered. Protocols and procedures for sample packaging and shipping are detailed in SOP 11, Appendix A.

Upon receipt at the laboratory, the custody seal will be broken and the condition of the samples will be recorded by the receiver. The chain-of-custody form will be signed. Custody forms will be used internally in the laboratory to track sample handling and final disposition.